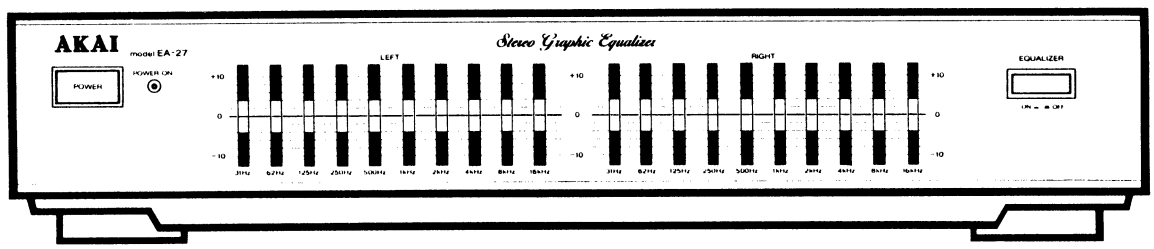
AKAI SERVICE MANUAL



STEREO GRAPHIC EQUALIZER

MODEL EA-27

SPECIFICATIONS

Number of bands	10 bands x 2
Center frequency	31 Hz / 62 Hz /125 Hz / 250 Hz / 500 Hz /1 kHz / 2 kHz / 4 kHz / 8 kHz /16 kHz
Control range	± 8 dB
Input sensitivity	150 mV / 50 kohms
Output sensitivity	150 mV / 3.3 kohms
S / N ratio (IHF-A)	100 dB
Frequency response	20 Hz to 20 kHz ± 1 dB
Power requirement	AC 230 - 240 V, 50 Hz for Europe except UK AC 240 V, 50 Hz for UK and Australia
Dimensions	425 (W) x 79 (H) x 266 (D) mm
Weights	2.2 kg

Standard accessories

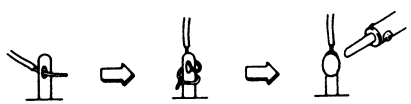
RCA pin cord	x 2
Operator's manual	x 1

* For improvement purposes, specifications and design are subject to change without notice.

★ SAFETY INSTRUCTIONS

PRECAUTIONS DURING SERVICING

1. Parts indentified by the ! (*) symbol are critical for safety. Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation.
   These must also be replaced only with specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, oise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous l i v e parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (Insulating barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

SEFETY CHECK AFTER SERVICING

After servicing, make measurements of leakage-current or resistance in order to determine that exposed parts are acceptably insulated from the supply circuit.
The leakage-current mesurement should be done between accessible metal parts (such as chassis, ground terminal, microphone jacks, signal input/output connectors, etc,) and the earth grond through a resistor of 1500 ohms paralleled with a 0.15 μF capacitor, under the unit's normal working conditions. The leakage-current should be less than 0.5 mA rms AC.
The resistance measurement should be done between accessible exposed metal parts and power cord plug prongs with the power switch (if included) "ON". The resistance should be more than 2.2 Mohms.

★ INFORMATIONS

SYMBOLS FOR PRIMARY DESTINATION

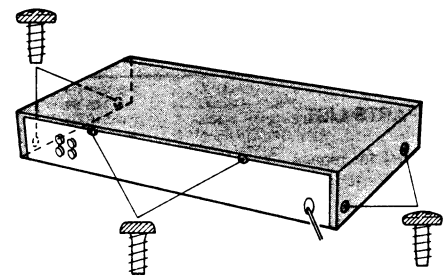
Primary destination of unit are indicated with the following alphbet.

Symbol	Primary Destination
B	UK
E	Europe (except UK)
S	Australia
V	Germany
U	Universal Aria
Y*	Custom version

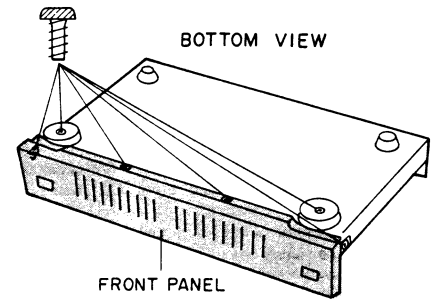
I. DISASSEMBLY

In case of trouble, etc., necessitating dismantling, please dismantle in the order shown in the illustrations.
Reassemble in reverse order.

1. Removal of UPPER COVER



2. Removal of FRONT PANEL



II. PRINCIPAL PARTS LOCATION

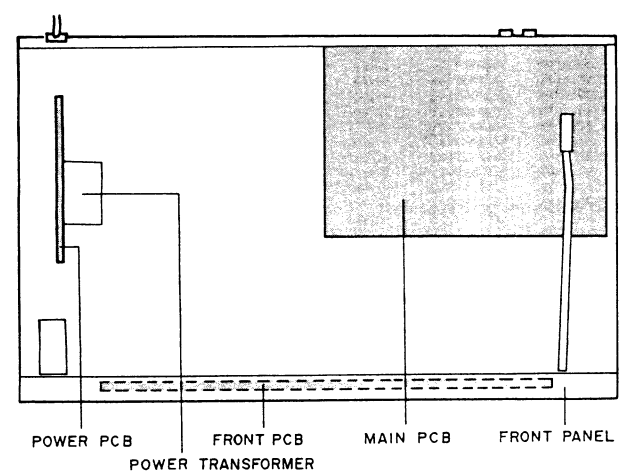


Fig. 2-1 Top view

III. PARTS LIST

ATTENTION

1. **When placing an order for parts, be sure to list Part No., Model No. and the description of eachpart. Otherwise, the non-delivery of the part or the delivery of a wrong part may result.**
2. **Please make sure that Part No. is correct when ordering. If not, a part different from the one you ordered may be delivered.**
3. **Since the parts shown in Parts List of Preliminary Service Manual may have been the subject of changes, please use this Parts List for all future reference.**

HOW TO USE THIS PARTS LIST

1. This Parts List lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
4. How to read the Parts List.

a) Mechanism Block

2. HEAD BASE BLOCK

Ref. No.	Part No.	Description
1	BH-T2023A320A	HEAD BASE BLOCK
2	HP-H2206A010A	HEAD R/P PR4-8FU C
3	ZS-477876	PAN20×03STL CMT
4	ZS-536488	BID20×08STL CMT
5	ZG-402895	SP CS ANGLE ADJUST

SP (Service Parts) Classification

This number corresponds with the individ ual parts index number in that figure.

b) PC Board

6. MAIN PC BOARD

Ref. No.	Part No.	Description
IC1	EI-324536	IC HD14049BP
IC2	EI-336801	IC MB8841-564M
C1A	EC-338399	C MMY V 223M 250AC [U,E,B,S]
C1B	EC-350949	C MMY V 223M 250DC [J]
C1C	EC-338397	C MMY V 223M 125AC [C,A]
X1	EI-318384	OSC X'TAL NC-18C

Symbols for primary destination

[A] : AAL (U.S.A) [S] : SAA (Australia)
[B] : BEAB (England) [U] : U/T (Universal Area)
[C] : CSA (Canada)
[E] : CEE (Europe) [V] : VDE (W. Germany)
[J] : JPN (Japan) [Y] : Custom Version

SP (Service Parts) Classification

These reference symbols correspond with component symbols in the Schematic Diagrams.

The available PC Board Blocks are listed separately.

5. When Part No. is known, Parts Index at end of Parts List can be used to locate where that part is shown in Parts List by its Reference No.listed at right of Part No.

WARNING

⚠ (*) INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS.

AVERTISSEMENT

⚠ (*) IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉDE L'APPAREIL, NE REMPLACER QUE DES PIÉCES RECOMMANDEES PAR LÉ FABRICANT.

1.RECOMMENDED SPARE PARTS

We suggest you to stock the following Recommended Spare Part items listed below since they can cover most of the routine service.

Ref.No.	Part No.	Description
1	*BT-735075K	TRANS POW A41-078Y-V [E]
2	*BT-735076K	TRANS POW A41-078Z-B [B,S]
3	ED-735026K	D LED DLR-503T
4	ED-624903	D SILICON H 1S2473
5	ED-511097	D SILICON 1N4001 50/1.0A
6	ED-735070K	D ZENER MTZ13C
7	ED-735077K	D ZENER MTZ18B
8	EI-355211	IC M5227P
9	ER-305791	R FUSE H RF25SJ 1/4W 100J
10	ER-325381	R FUSE H RF25SJ 1/4W 2R2J
11	*ES-735015K	SW PUSH SDL-1P [POWER SW]
12	ES-735080K	SW SLIDE TR2114153 [EQ EFFECT SW]
13	ET-728750K	TR KTA1015 GR
14	ET-728453K	TR KTA966A-Y
15	ET-735079K	TR KTB1366 Y
16	ET-728746K	TR KTC1815 GR
17	ET-735078K	TR KTD1302
18	ET-728677K	TR KTD2058 Y
19	EV-735081K	VR SLIDE RS30H113D 50KEW

2. P.C BOARD BLOCK

Ref.No.	Part No.	Description
1	BA-735133K	EQ MAIN PCB ASSY EA-27
2	BA-735149K	FRONT PCB ASSY EA-27

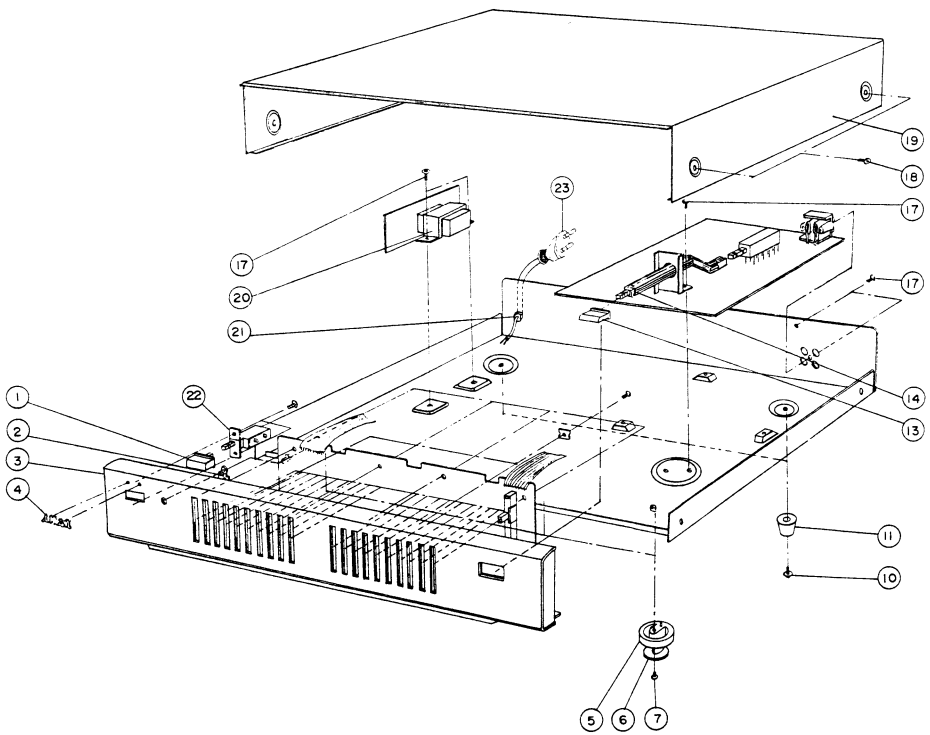
3. EQ MAIN P.C BOARD

Ref.No.	Part No.	Description
D201	ED-511097	D SILICON 1N4001 50/1.0A
D202	ED-511097	D SILICON 1N4001 50/1.0A
D203	ED-511097	D SILICON 1N4001 50/1.0A
D204	ED-511097	D SILICON 1N4001 50/1.0A
D205	ED-735077K	D ZENER MTZ18B
D206	ED-735077K	D ZENER MTZ18B
D211	ED-511097	D SILICON 1N4001 50/1.0A
D212	ED-511097	D SILICON 1N4001 50/1.0A
D213	ED-624903	D SILICON H 1S2473
D214	ED-624903	D SILICON H 1S2473
D215	ED-735070K	D ZENER MTZ13C
D216	ED-624903	D SILICON H 1S2473
D217	ED-624903	D SILICON H 1S2473
FR1	ER-305791	R FUSE H RF25SJ 1/4W 100J
FR2	ER-305791	R FUSE H RF25SJ 1/4W 100J
FR3	ER-325381	R FUSE H RF25SJ 1/4W 2R2J
IC1	EI-355211	IC M5227P
IC2	EI-355211	IC M5227P
IC3	EI-355211	IC M5227P
IC4	EI-355211	IC M5227P
J101	EJ-735017K	PIN J AP4-0032A
Q201	ET-728746K	TR KTC1815 GR
Q202	ET-728750K	TR KTA1015 GR
Q203	ET-728677K	TR KTD2058 Y
Q204	ET-735079K	TR KTB1366 Y
Q211	ET-728453K	TR KTA966A-Y
Q401	ET-735078K	TR KTD1302
Q402	ET-735078K	TR KTD1302
SW101	ES-735080K	SW SLIDE TR2114153 [EQ EFFECT SW]

4. VOLUME P.C BOARD

Ref.No.	Part No.	Description
LED	ED-735026K	D LED DLR-503T
VR501	EV-735081K	VR SLIDE RS30H113D 50KEW
VR502	EV-735081K	VR SLIDE RS30H113D 50KEW
VR503	EV-735081K	VR SLIDE RS30H113D 50KEW
VR504	EV-735081K	VR SLIDE RS30H113D 50KEW
VR505	EV-735081K	VR SLIDE RS30H113D 50KEW
VR506	EV-735081K	VR SLIDE RS30H113D 50KEW
VR507	EV-735081K	VR SLIDE RS30H113D 50KEW
VR508	EV-735081K	VR SLIDE RS30H113D 50KEW
VR509	EV-735081K	VR SLIDE RS30H113D 50KEW
VR510	EV-735081K	VR SLIDE RS30H113D 50KEW
VR511	EV-735081K	VR SLIDE RS30H113D 50KEW
VR512	EV-735081K	VR SLIDE RS30H113D 50KEW
VR513	EV-735081K	VR SLIDE RS30H113D 50KEW
VR514	EV-735081K	VR SLIDE RS30H113D 50KEW
VR515	EV-735081K	VR SLIDE RS30H113D 50KEW
VR516	EV-735081K	VR SLIDE RS30H113D 50KEW
VR517	EV-735081K	VR SLIDE RS30H113D 50KEW
VR518	EV-735081K	VR SLIDE RS30H113D 50KEW
VR519	EV-735081K	VR SLIDE RS30H113D 50KEW
VR520	EV-735081K	VR SLIDE RS30H113D 50KEW

FINAL ASSEMBLY



5. FINAL ASSEMBLY

Ref.No.	Part No.	Description
1	SK-735091K	KNOB POWER
2	SZ-735130K	LENS (A)
3	SP-735131K	PANEL FRONT EA-27
4	MA-735101K	BADGE AKAI
5	SA-735126K	FOOT FRONT AT
6	SA-735096K	CUSHION FOOT
7	ZS-490228	T2BID30X08STL CMT
10	ZS-352120	T2BR30X08STL BCM C080
11	SA-735100K	FOOT (R)
13	SK-735093K	KNOB DIRECT
14	SZ-735132K	CONNECTOR EQ
17	ZS-331182	BT BID30X08STL BNI
18	ZS-322580	ST BID40X08STL BNI
19	SP-735127K	COVER UPPER
20A	*BT-735075K	TRANS POW A41-078Y-V [E]
20B	*BT-735076K	TRANS POW A41-078Z-B [B,S]
21	*EZ-692908	STRAIN RELIEF SR-5N-4
22	*ES-735015K	SW PUSH SDL-1P [POWER SW]
23A	*EW-347897	AC CORD 2 CORES VM0364,LCFL EV [E]
23B	*EW-346249	AC CORD 2 CORES LCFL2X0.75 B [B]
23C	*EW-347898	AC CORD 2 CORES VM-0436,LCFL S [S]

NOTE:
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

AKAI

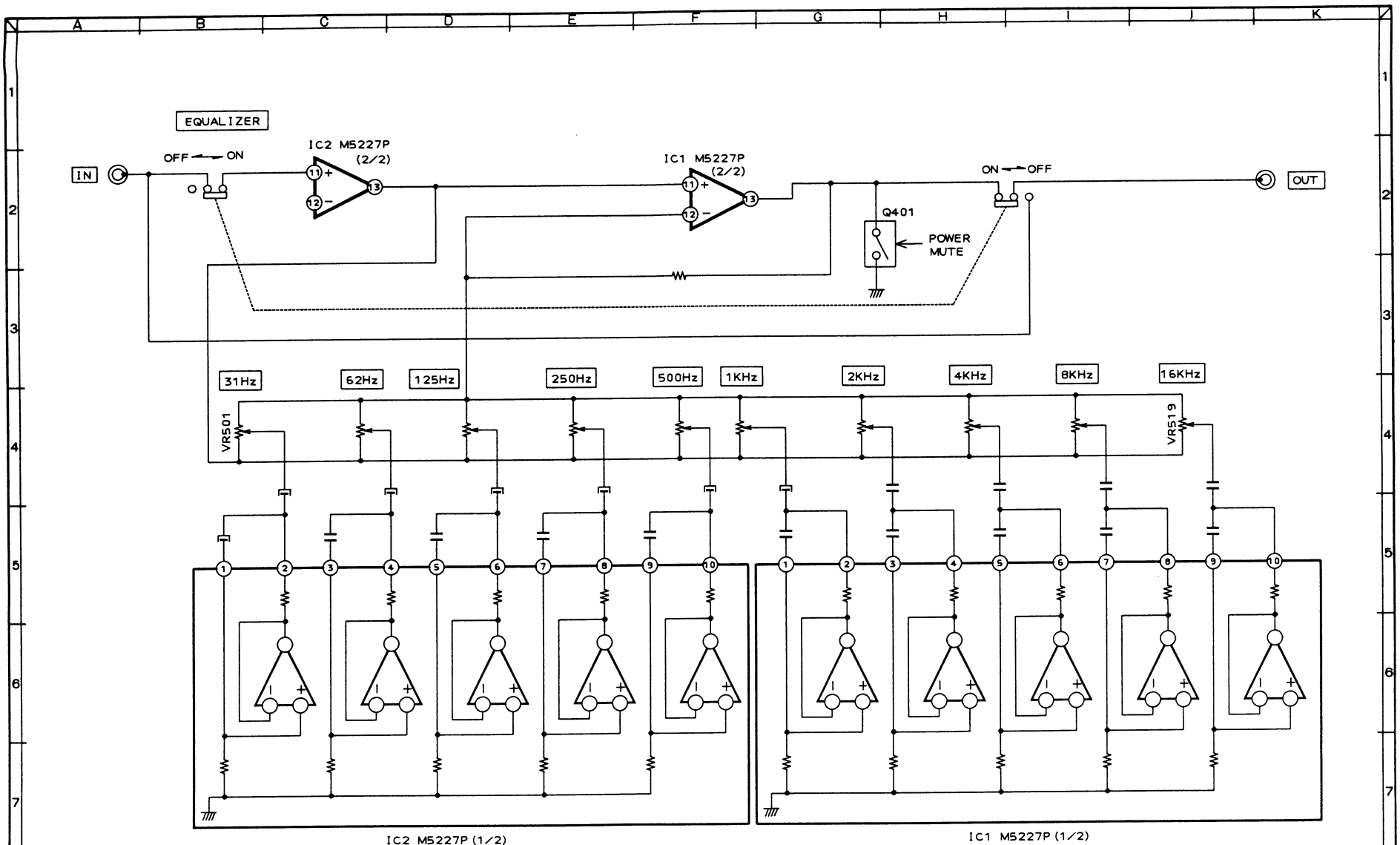
MODEL EA-27

SCHEMATIC DIAGRAMS AND PC BOARDS

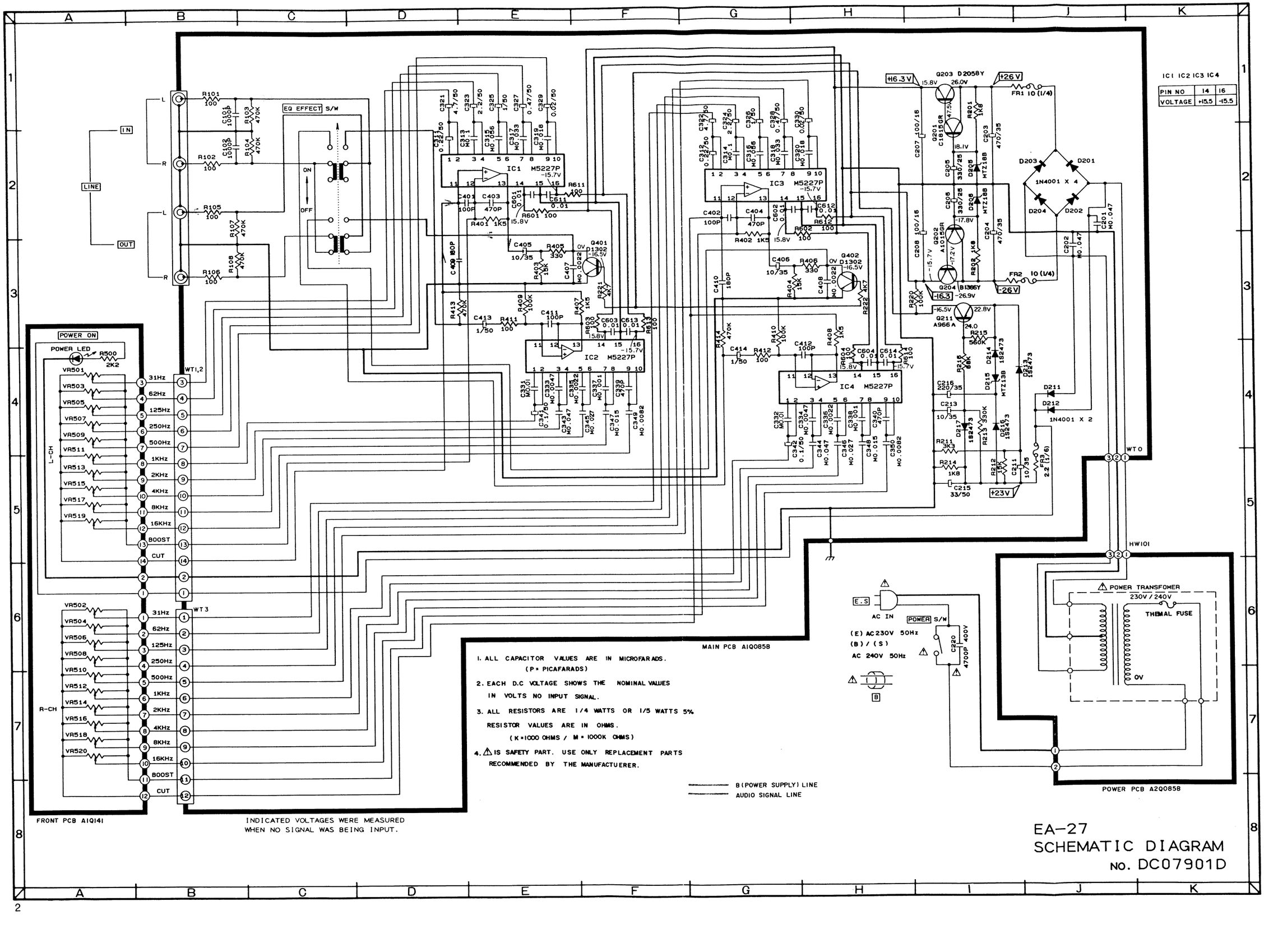
TABLE OF CONTENTS

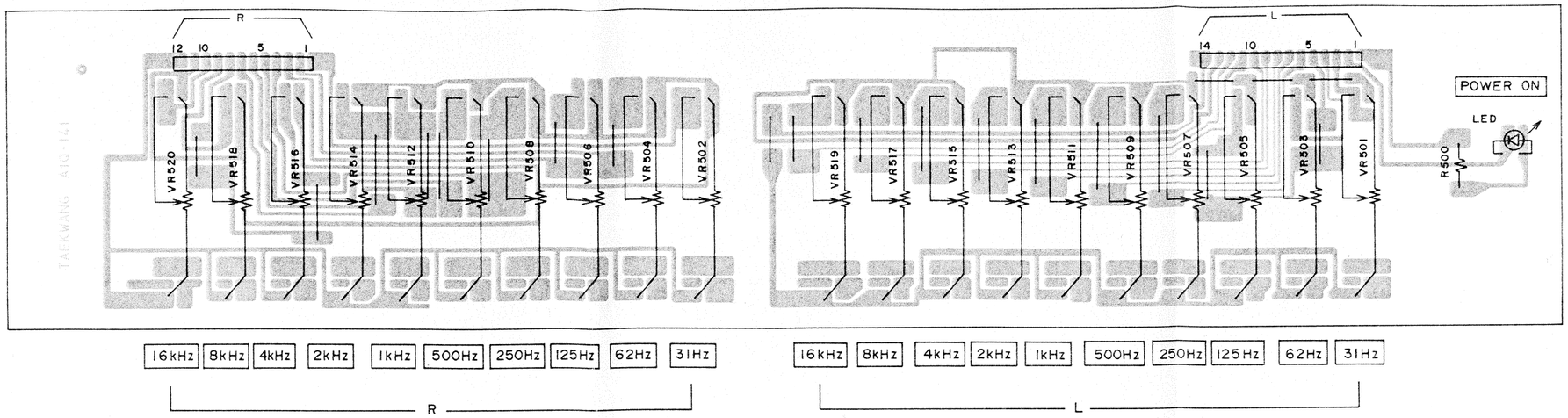
1. SCHEMATIC DIAGRAM 2
2. MAIN & FRONT PC BOARDS 3
3. BLOCK DIAGRAM 4

Use the following schematic diagrams and PC boards together with the provided service manual.

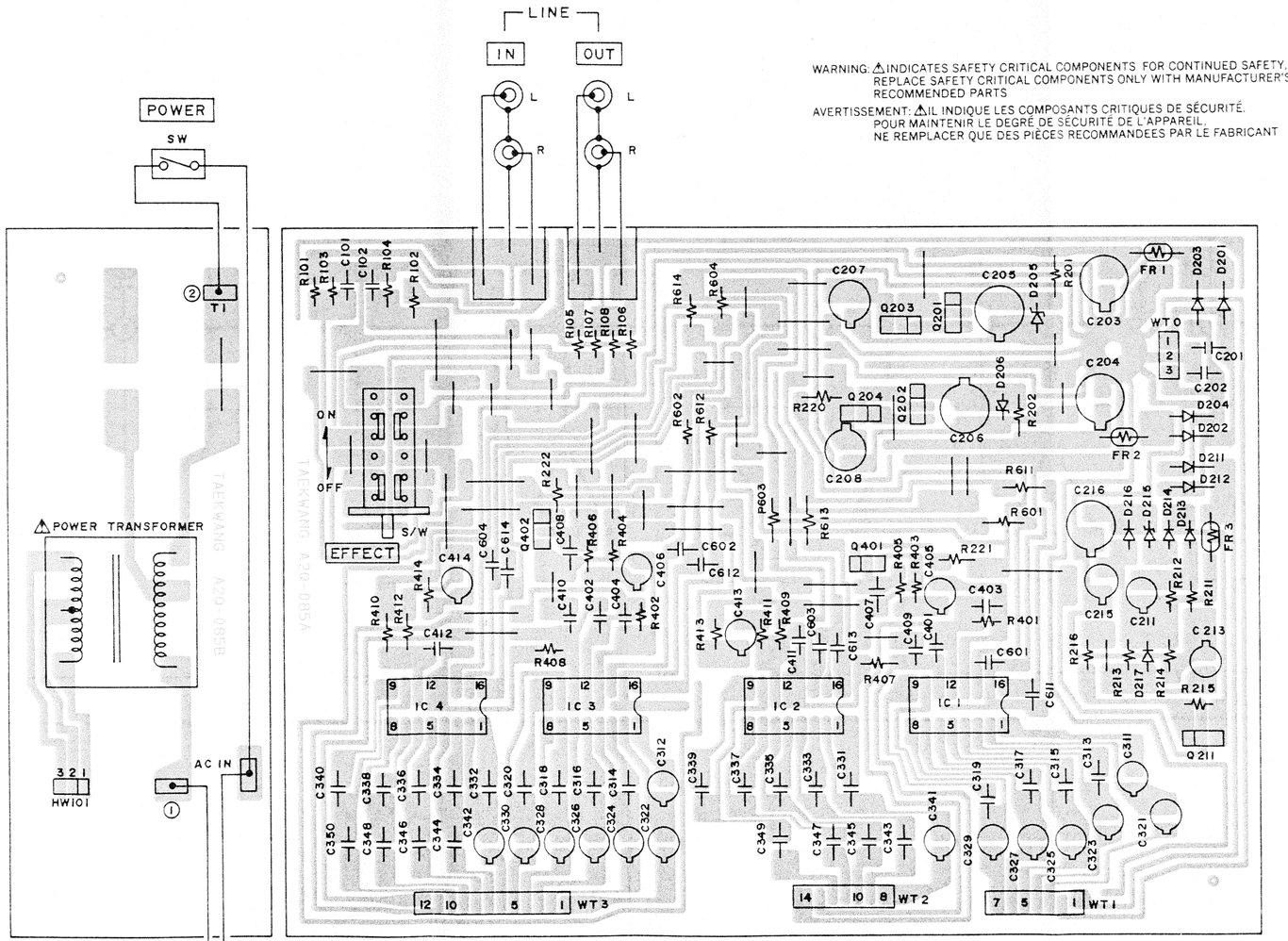


EA-27
BLOCK DIAGRAM
NO. DC07951M

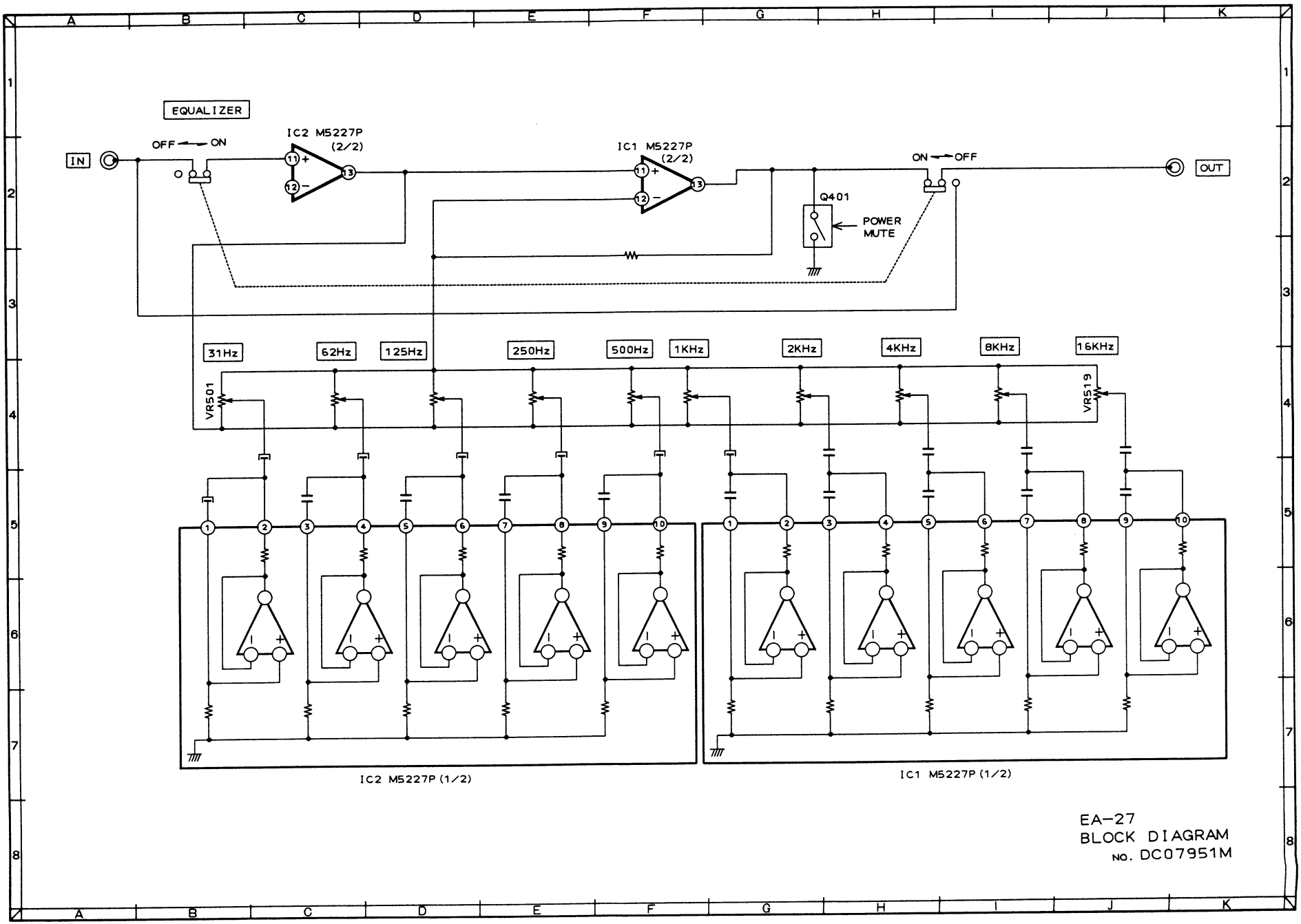

IC1 IC2 IC3 IC4
PIN NO 14 16
VOLTAGE +15.5 -15.5
IN
LINE
OUT
L
R
EQ EFFECT S/W
ON
OFF
POWER ON
POWER LED
R500 2K2
L-CH
R-CH
VR501
VR503
VR505
VR507
VR509
VR511
VR513
VR515
VR517
VR519
VR502
VR504
VR506
VR508
VR510
VR512
VR514
VR516
VR518
VR520
31Hz
62Hz
125Hz
250Hz
500Hz
1KHz
2KHz
4KHz
8KHz
16KHz
BOOST
CUT
WT1,2
WT3
IC1 M5227P -15.7V
IC2 M5227P -15.7V
IC3 M5227P -15.7V
IC4 M5227P -15.7V
+16.3V
+26V
-16.3
-26V
+23V
WT0
HW101
POWER TRANSFOMER
230V / 240V
THEMAL FUSE
0V
E.S
AC IN
POWER S/W
(E) AC 230V 50Hz
(B) / (S)
AC 240V 50Hz
C220 4700P 400V
B
1N4001 X 4
1N4001 X 2
FR1 10 (1/4)
FR2 10 (1/4)
FR3 2.2 (1/6)
MAIN PCB AIQ0858
POWER PCB A2Q0858
FRONT PCB AIQ141
INDICATED VOLTAGES WERE MEASURED WHEN NO SIGNAL WAS BEING INPUT.
1. ALL CAPACITOR VALUES ARE IN MICROFARADS. (P= PICAFARADS)
2. EACH D.C VOLTAGE SHOWS THE NOMINAL VALUES IN VOLTS NO INPUT SIGNAL.
3. ALL RESISTORS ARE 1/4 WATTS OR 1/5 WATTS 5% RESISTOR VALUES ARE IN OHMS. (K=1000 OHMS / M = 1000K OHMS)
4. ⚠ IS SAFETY PART. USE ONLY REPLACEMENT PARTS RECOMMENDED BY THE MANUFACTUERER.
B (POWER SUPPLY) LINE
AUDIO SIGNAL LINE
EA-27
SCHEMATIC DIAGRAM
NO. DC07901D



FRONT PCB AIQ141



TAEKWANG A2Q-085A
TAEKWANG A2Q-085B
TAEKWANG AIQ-141



EA-27
BLOCK DIAGRAM
No. DC07951M